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The effects of arthritis gloves on hand pain in people with rheumatoid or inflammatory arthritis: a randomised controlled trial (A-GLOVES TRIAL)

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Background: Arthritis (compression) gloves are commonly provided to people with rheumatoid arthritis (RA) and undifferentiated inflammatory arthritis (IA) in the UK health service. These apply pressure and warmth to relieve hand pain, stiffness and improve hand function. A systematic review identified little evidence to support their use.[1]

Objectives: This randomised controlled trial tested effectiveness and cost-effectiveness of mid-finger length compression (intervention) gloves (20% Lycra: commonest glove model provided) with control gloves (i.e. oedema gloves: 11% Lycra: fitted at least one size too big) in people with RA and IA.

Methods: Both gloves, which had similar thermal qualities although the control gloves did not provide compression, were provided by rheumatology occupational therapists, following training.[2] Participants were also given brief advice on hand exercise and joint protection. Adults with RA/IA and persistent hand pain were randomised 1:1 to the two glove types, stratified by disease modifying anti-rheumatic drug (DMARD) change in previous 12 weeks. The primary outcome was dominant hand pain on activity Visual Analogue Scale (VAS:0–10); other outcomes included night hand pain, hand stiffness (both 0–10 VAS); Measure of Activity Performance Hand (MAP-HAND: 0–3). Multiple linear regression was undertaken to estimate the effect of group allocation on hand pain during activity, adjusting for the stratification variable and baseline values. Cost-effectiveness used individual patient level costs (intervention plus healthcare utilisation) and health benefit data (EQ-5D) to calculate costs and QALYs.

Results: 206 participants were randomised (103 to each glove type): median age 59 years [IQR 51,67]; women:166 (81%); mean disease duration: 8.2 (SD 9.5) years; employed:76 (37%); right hand dominant:185 (90%). Of these, 163 (79%) completed 12 week follow-up questionnaires. Both groups reported similar adherence to glove wear (mean 5.2 days/week). At 12 w, hand pain scores in both groups similarly improved: the between-groups mean difference of 0.1 was not statistically significant (95% CI: −0.47 to 0.67;p=0.72). There were no significant differences between groups on any measures, with both groups improving similarly between baseline and 12 w. 73% in both groups considered gloves beneficial. Intervention gloves had higher costs (£552 (SD £464); control £391 (SD £543) but comparable benefits to control gloves. Intervention gloves would cost £83 700 to gain one QALY and were not likely to be cost-effective.

Conclusions: Compression (intervention) and loose-fitting arthritis (control) gloves had similar effects on hand pain, stiffness and function. Therefore, compression is not the 'active ingredient' in arthritis gloves. Loose fitting gloves providing warmth were perceived as equally effective by participants. We do not know if the therapist effect is important or whether ordinary gloves providing warmth would provide similar results.

References

1. Hammond, et al. Clin Rehabil 2016 30:213–24.
2. Prior, et al. Rheumatology 2017. www.abstractsonline.com/pp8/#!/4205

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